

## 708.00 Bridge Diaphragms

- A. Steel diaphragms, if allowed, are shown in the plans for prestressed beam structures. Shop drawings are required for steel diaphragms showing details of beam layouts, location of the diaphragms, and location of mounting holes.
1. High strength bolts for steel diaphragms shall be tightened by Turn-of-Nut method. (Refer to *SSHC Subsection 708.03* for information on proper bolt inspection and installation.) Inspection and field installation acceptance will be based on observing proper Turn-of-Nut procedures. (A tensioning device and inspection torque wrench is recommended, but will not be required.)
  2. Concrete diaphragms at piers of prestressed concrete girder bridges should be cast to 2/3 of their intended depth. The final 1/3 and the deck are then placed at the same time. However, there are instances where allowance has been given for specific diaphragms to be placed prior to slab placement. If there is a construction option shown in the plans, the diaphragm can be poured separate from the deck. Note the construction joint detail will show how to strike-off the surface. Consult with the Construction Division in situations where the contractor requests to place concrete diaphragms other than as shown in the plans.
  3. Phased bridge decks which have inverted "T" girders should not have the portion of the diaphragms cast between the two girders on each side of the longitudinal phasing construction joint until the second phase deck is cast. If the girder diaphragms for the gap between the two girders which are on each side of the phasing joint are cast before the second phase deck is cast, the diaphragms will lock the girders under the second phase deck at a position higher than the phase 1 girders. Cast the diaphragms between the two girders that are on each side of the phasing construction joint at the time the second phase deck is cast. The remaining girder diaphragms in the second phase should be cast before the deck is cast.
    - a. Casting the intermediate (midspan) diaphragms before the deck is cast removes some of the girder camber and will make the structure more stable for the deck casting.